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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 April 2008*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9 and 10* is/are rejected.

7)☐ Claim(s) *8 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date *4/11/08*.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-11 are presented for examination. Applicant has cancelled claims 12-30 in the

Amendment on 4/11/08.

2.   This action is in response to the Amendment/Replay on 4/11/08. Applicant's arguments

have been fully considered but were not found to be persuasive.

Claim Objections

3.   Claims 2 and 4 are objected to because of the following informalities:

a.   In line 3 of claims 2 and 4, the term "in enqueued" should be changed to "is

enqueued" to correct the grammatical error. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   **Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schober (US**

7,237,016 B1) in view of DeKoning et al. (hereinafter DeKoning) (US 6,457,098 B1).

5.   As to claim 1, Schober teaches a method comprising:

attempting in a first attempt (resource request) to acquire a first resource for a task

requiring both a first resource and a second resource (an arbiter arbitrates resource requests for

resources) (col. 2, lines 42-60);

enqueuing said task on a first queue if said first attempt to acquire said first resource for

said task fails (place the resource request within a first queue associated with a first resource if

the first resource fails because it is unavailable) (col. 2, lines 50-52);

attempting in a first attempt to acquire said second resource for said task (col. 2, lines 52-

54);

enqueing said task on a second queue if said first attempt to acquire said second resource

for said task fails (place the resource request within a second queue associated with a second

resource if the second resource is unavailable) (col. 2, lines 52-54); and

6.   In summary of the above citations, Schober teaches a first resource having a first queue

and a second resource having a second queue with an arbiter that manages the resource request

for attempts. The task is enqueued on the first queue if the first resource is unavailable and thus

fails to acquire it. Similarly, the task is enqueued on the second queue if the second resource is

unavailable and thus fails to acquire it.

7.   Schober does teach issuing a grant upon availability of both the first and second resources

such that it waits until there is positive determination for each resource availability checks and

should any resource be unavailable, the request is returned (col. 23, lines 27-28, col. 15, lines 16-

22). However, Schober is silent in acquiring in a second attempt said first resource for said task

and releasing said first resource for said task if said first attempt to acquire said second resource

for said task fails.

8.   DeKoning teaches coordination between a primary controller 118.1 (first resource) and a

secondary controller 118.2 (second resource) with many different types of scenarios of

interactions. One scenario taught in particular provides recovery techniques involves a primary

controller determining that a failure has occurred with the secondary controller, and if so, the

primary controller forces the release of the resource via a semaphore (col. 14, lines 58-66). If the

first resource is successfully acquired but the second resource has failed, the first resource

performs the release and the system can start over again with another attempt until the first

resource is successfully acquired, followed by successfully acquiring the second resource.

9.   It is inherent that after the first resource is acquired, the task in the first queue (acting as a

wait queue) needs to be removed because it is no longer "failed" or waiting to be acquired.

10.   Schober and DeKoning are analogous art because they are both relate to coordination

between storage subsystems. Schober teaches that the physical properties of the system can

support many systems including storage subsystems (col. 2, lines 10-22). Therefore, the

resources of Schober's system (first resource, second resource, etc.) can be applied to storage

subsystems, and particularly, Schober's first resource and second resource can be referred to

DeKoning's primary controller and secondary controller, respectively.

11.   One of ordinary skill in the art would have known to modify the resources of Schober

such that it would allow for acquiring in a second attempt said first resource (primary controller)

for said task and releasing said first resource for said task if said first attempt to acquire said

second resource (secondary controller) for said task fails, as taught in DeKoning.

12.   The suggestion/motivation for doing so would have been to provide the predicted result

of providing standard error check and recovery techniques for enhancing the message exchange

protocol between the first and second resources (col. 14, lines 58-67 through col. 15, lines 1-3).

13.   Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine Schober and DeKoning to obtain the invention of claim 1.

14.   Claims 2-7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Schober (US 7,237,016 B1) in view of DeKoning et al. (hereinafter DeKoning) (US 6,457,098

B1), and further in view of Ben-Shachar et al. (hereinafter Ben-Schachar) (US

2001/0010053 A1).

15.   As to claim 2, Schober teaches using a priority scheme for the resource allocation (col. 8,

lines 27-40). The first resource fails when a second task occurs because it has already moved on

to the second task. Schober and DeKoning are silent in teaching that tasks having the same

priority be grouped/contained in the same queue. However, Ben-Shachar teaches that a wait

queue 430 may include three internal queues, one for each priority level, high priority 432,

medium priority 434, and low priority 436. Similarly, the idle queue 438 may include three

internal queues, one for each priority level, high priority 440, medium priority 442, and low

priority 444 (see paragraph [0155]). It would have been obvious to one of ordinary skill in the

art at the time the invention was made to modify the queues for the resources of Schober in view

of DeKoning such that it would include the three internal queues of high priority, medium

priority and low priority. The suggestion/motivation for doing so would have been to provide

the predicted result of ensuring efficient workload balancing ([0054], [0070]). Therefore, it

would have been obvious to combine Schober, DeKoning and Ben-Shachar to obtain the

invention of claim 2.

16. As to claim 3, Schober, DeKoning, and Ben-Shachar teaches the method of claim 2

wherein said first task has a first priority, said method further comprising:

attempting in a first attempt to acquire said first resource for a third task requiring said

first resource and having a second priority higher (medium priority) than said first priority (low

priority) (Ben-Shachar, [0155]), and

enqueuing said third task on a third queue (medium priority queue) (Ben-Shachar,

[0155]) if said first attempt to acquire said first resource for said third task fails (Schober, col. 2,

lines 42-60, see DeKoning, col. 14, lines 58-66, and see explanation of rejection of claim 1); and

wherein said first attempt to acquire said first resource for said first task fails when said

third task having said second priority (medium priority) is in enqueued on said third queue

(medium priority queue) (Ben-Shachar, [0155]).

17.   As to claim 4, Schober (col. 2, lines 42-60), DeKoning (col. 14, lines 58-66), and Ben-

Shachar ([0155]) teaches the method of claim 3 wherein said first task has a first priority, and

wherein said first attempt to acquire said second resource fails when a fourth task having said

first priority (low priority) in enqueued on said second queue (low priority queue of the second

resource).

18.   As to claim 5, Schober, DeKoning, and Ben-Shachar teaches the method of claim 4

wherein said first task has a first priority, said method further comprising:

       attempting in a first attempt to acquire said second resource for a fifth task requiring said

second resource and having a second priority (medium priority) (Ben-Shachar, [0155]) higher

than said first priority (low priority) ([0155]) (Ben-Shachar, [0155]), and

       enqueuing said fifth task (having a medium priority) (Ben-Shachar, [0155]) on a fourth

queue (medium priority queue) (Ben-Shachar, [0155]) if said first attempt to acquire said second

resource for said fifth task fails (Schober, col. 2, lines 42-60, see DeKoning, col. 14, lines 58-66,

and see explanation of rejection of claim 1); and

       wherein said first attempt to acquire said second resource for said first task fails when

said fifth task having said second priority (medium priority) (Ben-Shachar, [0155]) is in

enqueued on said fourth queue (medium priority queue) (Ben-Shachar, [0155]).

19.   As to claim 6, Schober and DeKoning teaches the method of claim 5 further comprising:

acquiring in a third attempt said first resource for said first task (col. 2, lines 50-52 of Schober);

attempting to acquire in a second attempt said second resource for said first task (col. 2, lines 52-54 of Schober); and

20.   DeKoning teaches releasing said first resource for said first task if said second attempt to acquire said second resource for said task fails (col. 14, lines 58-66).

21.   Schober teaches a first resource having a first queue and a second resource having a second queue with an arbiter that manages the resource request for attempts. The task is enqueued on the first queue if the first resource is unavailable and thus fails to acquire it. Similarly, the task is enqueued on the second queue if the second resource is unavailable and thus fails to acquire it. DeKoning teaches coordination between a primary controller 118.1 (first resource) and a secondary controller 118.2 (second resource) with many different types of scenarios of interactions. One scenario taught in particular provides recovery techniques involves a primary controller determining that a failure has occurred with the secondary controller, and if so, the primary controller forces the release of the resource via a semaphore (col. 14, lines 58-66). If the first resource is successfully acquired but the second resource has failed, the first resource performs the release and the system can start over again (indefinite amount of attempts) with another attempt until the first resource is successfully acquired, followed by successfully acquiring the second resource.

22.   As to claim 7, Schober and Dekoning teaches the method of claim 5 further comprising:

acquiring in a third attempt said first resource for said first task (Schober, col. 2, lines 50-52);

acquiring in a second attempt said second resource for said first task (Schober, col. 2, lines 52-54);

removing said first task from said second queue (because second resource was acquired, no longer failed or on the "wait" queue anymore) (similar reasoning made in the rejection of claim 1); and

dispatching said first task to be completed using said first and second resources (performed by arbiter/resource allocator) (Schober, col. 2, lines 44-50).

23.   Schober teaches a first resource having a first queue and a second resource having a second queue with an arbiter that manages the resource request for attempts. The task is enqueued on the first queue if the first resource is unavailable and thus fails to acquire it. Similarly, the task is enqueued on the second queue if the second resource is unavailable and thus fails to acquire it. DeKoning teaches coordination between a primary controller 118.1 (first resource) and a secondary controller 118.2 (second resource) with many different types of scenarios of interactions. One scenario taught in particular provides recovery techniques involves a primary controller determining that a failure has occurred with the secondary controller, and if so, the primary controller forces the release of the resource via a semaphore (col. 14, lines 58-66). If the first resource is successfully acquired but the second resource has failed, the first resource performs the release and the system can start over again *(indefinite*

amount of attempts) with another attempt until the first resource is successfully acquired,

followed by successfully acquiring the second resource.

24.   As to claim 9, Schober teaches the method of claim 7 wherein said third attempt is

initiated by the second resource becoming free (as found in the free list 206) (col. 9, line 58).

25.   As to claim 10, Schober teaches the method of claim 7 wherein said third attempt is

initiated by the first resource becoming free (from the free list 206) (col. 9, line 58).

Allowable Subject Matter

26.   Claims 8 and 11 are objected to as being dependent upon a rejected base claim, but would

be allowable if rewritten in independent form including all of the limitations of the base claim

and any intervening claims, as well as overcoming the claim objections and any 35 USC 101

rejections set forth in this office action.

Response to Arguments

27.   During patent examination, the pending claims must be "given their broadest reasonable

interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d

1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during

prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once

issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05,

162 USPQ 541, 550-51 (CCPA 1969).

28.   The Applicant has not amended the claims nor provides any arguments regarding the

claim objections set forth in the previous office action. The Applicant is required to amend the

claims to overcome the objection or provide arguments against the claim objections by the

Examiner.

29.   *Applicant's sole argument (page 7 of the Remarks) is that the Examiner has failed to*
explain what is meant by the primary controller 118.1 being "successfully acquired." Acquired
by what and for what purpose? The Examiner has filed to explain what is meant by the primary
controller 118.1 releasing itself. The Examiner has failed to explain what is meant by the
secondary controller 118.2 being "successfully acquired." Again, acquired by what and for
what purpose?

As pertaining to the reference of DeKoning, the meaning of "successfully acquired" is

not a failure. A "failure" vs. being "successfully acquired" are opposites of each other.

Applicant argues more specific than what the claims require. Therefore, Applicant's arguments

were not found to be persuasive.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The

examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenneth Tang/
Examiner, Art Unit 2195

/Li B. Zhen/
Primary Examiner, Art Unit 2194